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Comparison of the Chromium Distribution in New Super Koropon Primer to 30 Year Old Super Koropon Using Focused Ion Beam/Scanning Electron Microscopy

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Super Koropon primer (MB0125-055) plays a significant role in the corrosion protection of areas throughout the Orbiter. Because the Shuttle Program relies so heavily upon the performance of the Koropon primer, it is necessary to fully understand all aspects of the behavior of the coating. One area where little understanding of the Koropon primer still exists is the level of risk associated with age related degradation.

Recently, efforts were undertaken to better understand the age life of the Koropon primer and to gain some insight into the aging process of this coating. In that study, an aluminum access panel from the Orbiter Enterprise was used to investigate the performance of the old Koropon film. A control panel was also used to study the performance of new Koropon coating. Preliminary investigations into the performance of aged Super Koropon primer indicated a significant decrease in corrosion protection. This investigation serves as an example of how Focused Ion Beam/Scanning Microscopy can be used to characterize the changes that occur as coatings age.